DOCUMENT RESUME

ED 202 503 JC 810 265

AUTHOR Penisten, John
TITLE The Effects of Computer Assisted Instruction in a Community College Learning Lab.
PUB DATE 10 Apr 81
NOTE 10p.; Paper presented at the Annual Convention of the Western College Reading Association (Dallas, TX, April 9-12, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Persistence; *Basic Skills; Community Colleges; *Computer Assisted Instruction; *Learning Laboratories; Student Attitudes; Two Year Colleges
IDENTIFIERS *PLATO; University of Hawaii Community College System

ABSTRACT

The learning lab at Hawaii Community College (HCC) has, for the past year and a half, utilized the PLATO (Programmed Logic for Automatic Teaching Operations) computer-assisted instructional program. PLATO, which is used by students whose preferred learning mode falls into the listening, visual, or reading categories, serves to broaden the learning options available at the lab and to help the lab optimally fulfill its articulated goals and objectives. PLATO, which originated at the University of Illinois, is modular in nature and presents short personalized lessons in computation, reading, and other basic skills. Students, with the aid of tutors, progress from simple to complex objectives, receive immediate feedback, and can eventually increase their competencies to the ninth-grade level. The PLATO lessons supplement required course work, with the amount of time spent by the student on the lessons being determined by the student and his/her instructor. An initial two-semester examination of the retention rates and attitudes of basic skills students who used PLATO and those who did not revealed that students with PLATO experience achieved higher course completion rates and higher overall grade point averages than the non-PLATO students. The paper outlines the goals and objectives of HCC's learning lab and presents Fall 1980 reading and math completion rates for PLATO and non-PLATO students. (JP)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED202503

THE EFFECTS OF COMPUTER ASSISTED INSTRUCTION IN A COMMUNITY COLLEGE LEARNING LAB

by John Penisten
Reading Instructor
Hawaii Community College
Hilo, Hawaii

Presented To The

Fourteenth Annual Convention

Western College Reading Association

Dallas, Texas

April 10, 1981

JC 810 265

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
John Penisten

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

THE EFFECTS OF COMPUTER ASSISTED INSTRUCTION
IN A COMMUNITY COLLEGE LEARNING LAB

Abstract

This paper provides information on the effectiveness of using an individualized computer assisted instructional program on students with basic skills deficiencies in reading and math. The program described has been in operation for one and a half years at the Learning Lab of the University of Hawaii-Hilo/Hawaii Community College.

The presentation first discusses the context within which the PLATO computer program (short for Programmed Logic for Automatic Teaching Operations) operates. Statement of the Learning Lab's mission, goals, and objectives is made. The point is made that the Lab seeks to provide students with multiple options to assist them in achieving their educational goals. The PLATO computer program is seen as one of those options.

The PLATO project is described, emphasizing the fact that it is merely a supplementary learning skills program. The Basic Skills Learning System is the package of individualized lessons used. The BSLS package contains lessons in reading, math, and writing that can assist students to develop competency to the ninth grade level.

Evaluation data purports to measure the impact of PLATO on attitudes toward learning rather than impact on reading and math achievement levels. Initial results are positive. PLATO is looked upon by "high risk" students and instructors as a positive influence on student performance.

THE EFFECTS OF COMPUTER ASSISTED INSTRUCTION
IN A COMMUNITY COLLEGE LEARNING LAB

At the University of Hawaii-Hilo/Hawaii Community College Learning Lab, a computer assisted instructional program has been in operation for one and a half years. PLATO (short for Programmed Logic for Automatic Teaching Operations) through its Basic Skills Learning System component provides a wide range of individualized drill and practice lessons in basic reading, math, and writing.

The purpose of this presentation is to provide information on the effectiveness of using an individualized computer assisted instructional program on students with basic skills deficiencies in reading and math.

Lab Overview

To do this, an overview of the context within which PLATO operates is needed. This will be given through statements of the Learning Lab's mission, goals, and objectives. Following this, the PLATO project will be outlined with a discussion of its organization, specific activities, how it's used, and evaluation data.

Discussion of the Learning Lab overview can be simply stated with the operating principle:

> "The services of the Learning Lab will be directed toward providing as many options as possible for students to develop the self-confidence, motivation, and learning skills necessary for success in the academic program of their choice."

This operating principle is followed with a statement of Learning Lab Goals, which are divided into two areas, Affective and Cognitive.

Affective Goals

To develop students self-confidence and motivation.

To make students aware of the personal interest and concern that faculty and staff have for them.

To assist students in making appropriate educational and career decisions.

Cognitive Goal

To assist students in developing learning skills to achieve satisfactory academic progress in programs of their choice.

Following the acceptance of these general Lab Goals, the staff of the Learning Lab identifies specific objectives which provide learning assistance to students enrolled in reading, writing, math, and English as a Second Language courses, and to self-referred and instructor referred students. These objectives are as follows:

To provide diagnostic services.

To provide tutorial assistance.

To provide materials and activities to supplement and complement classroom instruction.

To provide materials and activities to meet individual student needs.

Because the Learning Lab's role is to provide optimum services to students, multiple options are available to assist students in achieving their educational goals. These options range on a scale from independent to dependent in nature. They are as follows:

Completely independent work using a variety of Lab media supervised by Lab staff.

Independent work and consultation with a tutor.

One on one work with a tutor.

Direct student-instructor interaction and supervised work.

Placement of students into one of the available work options is dependent upon the assessed preferred instructional mode. Students whose preferred learning modes are listening, visual, reading, etc. have the following media/equipment available: PLATO, controlled reader, filmstrip-tape sets, slide-tape sets, language masters, reading kits, etc.

Students whose preferred learning modes are person-dependent have available a range of staff: tutors, instructors, and lab staff for regular one on one and/or small group instruction.

Computer Project

The PLATO computer program originated at the University of Illinois. The Control Data Corporation supplies the

terminals and access to the Basic Skills Learning System package. The project is funded through a federal Strengthening Developing Institutions Program grant (SDIP).

The PLATO program is designed to help people lacking skills in basic math, reading, and language. Using these computer lessons and supplementary booklets, learners can increase their competency to the ninth grade level. PLATO diagnoses and routes students through troublesome areas and charts their progress automatically. It provides immdediate positive feedback on a student's response and personalizes the lessons by displaying the student's name and graphic images of the student's progress.

The PLATO basic skills program is modular in nature and includes small units of instruction as in a specific math computation skill, a reading skill, etc. PLATO is also objective based, in that students begin with the simplest objectives and progress to the most complex.

Students are generally assigned to PLATO if their placement test score falls below the 25th percentile on the Reading Placement Test (College Entrance Examination Board). Within the context of the student's course work, PLATO lessons are part of the required lab work but PLATO does not supplant regular course work; it is only supplementary in nature. The amount and length of time a student spends on PLATO is determined by the instructor but students

are free to set their own PLATO work schedule.

The availability of tutor assistance is crucial to the success of the PLATO program. There are many instances where the availability of tutors to solve minor problems and answer questions has helped students overcome initial apprehensiveness about PLATO. Tutors can guide students through operating and selecting PLATO lessons in addition to solving problems that arise. Tutors also assist by logging and reporting on all students' progress weekly. And tutors can add a personalized touch by writing positive morale boosting notes to students via the PLATO note system. Even though tutors are available on a regular basis, instructors are encouraged to monitor their own students progress.

In relation to math courses, students are assigned to PLATO lessons at the discretion of the instructor. PLATO math lessons are used only as a supplementary resource, they do not supplant the regular math lecture-textbook assigned material. All math students are expected to work on PLATO sometime during the semester. Monitoring of students is done by the individual instructors.

Evaluation

In a given semester, some 300 reading and math students utilize the PLATO basic skills program. For evaluation purposes, control and experimental groups were identified

as Non-PLATO (no computer use) and PLATO (minimum four hours of computer use). The evaluation data was gathered over two semesters, Spring, 1980, and Fall, 1980. It might be noted that the purpose of the data evaluation was to measure the impact of PLATO on attitudes toward learning rather than impact on reading and math achievement level per se.

The initial results are positive. The course completion rates improved by as much as 28%. Student persistence rates from one semester to the next improved by as much as 10%. In addition, 85% of students expressed positive attitudes toward PLATO as an instructional resource. Over 80% of the students agreed that PLATO increased their interest in reading. It is seen then, that PLATO is looked upon by "high risk" students and their instructors as a positive influence on student performance.

The specific data is as follows:

Spring, 1980

Reading	PLATO	NON-PLATO
Course completion	90%	62%
Retention	84%	74%
Math	**PLATO**	**ALL MATH STUDENTS**
Course completion		
Math 001X	100%	72%
Math 001Y	95%	66.6%
Math 001Z	62%	39.9%

Fall, 1980

		PLATO	NON-PLATO
Reading			
	Course Completion	85%	74%
	Retention	100%	97%
Math			
	Course Completion		
	Math 001X	100%	87%
	Math 001Y	87%	53%
	Math 001Z	60%	43%
	Retention	96%	99%
AVERAGE GPA		2.58	2.39

Summary

Even though the statistics may not prove conclusively that PLATO has a significant impact on learning, instructors generally feel that it is a definite attention getter, motivator, and stimulant to student interest.

Because of the nature of PLATO, its ability to reinforce students positively on a continual basis, its definite patience, and its repetitive lessons and explanations, it is agreed that there is no other instructional medium that can do what it does.